

# TRE May Help Remodel Eating Behaviors

**This 12-week clinical trial of time-restricted but not energy-restricted eating in overweight and obese adults demonstrates that even a limited period of time-restricted eating (TRE) can improve weight and body composition in these individuals. It further establishes that TRE is a feasible approach to managing behaviors that impact glucose metabolism and risk for inflammatory and cardiometabolic disorders.**

Approximately 36% of US adults are obese (BMI  $\geq 30$  kg/m<sup>2</sup>), and a majority of US adults are overweight. Obesity and overweight are linked to changes in energy metabolism, blood sugar regulation, and immune function, and are associated with significant health care costs. Recent evidence indicates that the median daily eating window for adults is almost 15 hours, and early studies suggest that narrowing the eating window through TRE presents a simple means of addressing eating habits that affect body composition and long-term health.

TRE is variously applied with maintenance of normal energy intake, energy restriction, or unrestricted energy intake, and it may be combined with exercise or controlled intake of protein. In previous TRE studies not limiting energy intake and not introducing exercise as a variable, TRE has shown beneficial influence on fat mass, visceral fat, glucose tolerance, and insulin sensitivity. The results of TRE research employing resistance exercise or protein supplementation have demonstrated more consistent maintenance or improvement in lean mass.

In this controlled trial, 20 pre-screened, non-diabetic, overweight/obese adults (mean BMI 34.1 kg/m<sup>2</sup>) with a mean daily eating window of 15.4 hours were randomized to follow their normal eating pattern or an 8-hour eating window for a 12-week study period. Participants were assessed for height, weight, body composition, blood lipid profile, oral glucose tolerance, hemoglobin A1c level, continuous blood glucose values, number of daily eating occasions, and physical activity level prior to and after intervention. Physical activity and continuous glucose



monitoring sensors were worn for about 2 weeks to gather data, and eating windows were evaluated via smartphone application (myCircadianClock). Subjects observing TRE freely chose a set 8-hour eating window to follow for the 12-week period, while non-TRE subjects were instructed to eat as usual, and participants received no other eating or dietary instruction. Eating occasions within the eating window were defined as any oral intake other than water or medication for at least 15 minutes apart from other food or drink.

**According to the authors:**

**“TRE resulted in fewer eating occasions, greater body weight loss, lean mass loss and visceral fat loss compared to non-TRE and pre-intervention values.”**

**“TRE may cause involuntary reductions of energy intake via reduced eating occasions.”**

## Clinical Summary

Comparing overweight/obese study subjects instructed to observe an 8-hour eating window of time-restricted eating (TRE) versus controls observing no eating restrictions (non-TRE) for 12 weeks, the following results were found:

- During the study period, subjects in the TRE group reduced their mean eating window to 9.9 hours rather than the intended 8 hours (though a significant mean reduction of 5.4 hours), and non-TRE subjects' mean eating window narrowed slightly to 15.1 hours.
- Pre-intervention eating window length correlated positively with BMI, and the researchers noted that less than 30% of the individuals screened for study participation showed an initial eating window of under 14 hours.
- In the TRE group, greater narrowing of the eating window correlated with greater loss of fat mass and visceral fat, but not body weight loss.
- Compared to the non-TRE group, the TRE group lost significantly more weight, visceral fat, and lean mass, and showed significant reduction in the number of daily eating occasions.
- Compared to their own pre-intervention values, the TRE group showed significantly lowered fasting glucose and triglyceride levels and significantly increased amount of time within the targeted continuous glucose monitoring range. The TRE group also displayed non-significant reductions in weight, fat mass, visceral fat, and lean mass compared to their pre-intervention values.
- The non-TRE group showed no significant changes in body composition, blood lipid values, or glycemic measures relative to their pre-intervention values.



## **NUTRITION CONCLUSION**

**Time-restricted eating (TRE) is a realistic means of modulating the glycemic influence of food energy through narrowing the daily eating window. Evidence suggests that combining TRE with exercise or protein supplementation may further optimize its metabolic benefits by supporting lean body mass.**

